

**DISTRIBUTED LOAD TRANSMISSION LINE MATCHING NETWORK****ABSTRACT OF THE DISCLOSURE**

An apparatus and method for maximizing ac energy delivered to a load  
5 by minimizing energy reflected from a load, such as an RF power source coupled to a plasma load for substrate processing chambers, including a matching network, wherein the matching network couples an ac power source and load. The matching network having two transmissions lines that are inductively coupled for a fixed portion of their length, such length being at least one wavelength of the ac energy generated by the ac  
10 power source. The matching circuit providing continuously variable impedance matching through the use of fixed components.

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